B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1MACSC01**	Title of the Course	**Computer Fundamentals - I**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of computer organization and problem solving using algorithms and flowcharts. 2. To impart knowledge on fundamental concepts of number systems. 3. To provide knowledge on office automation tools.

Course Content		
Unit	Description	Weightage* (%)
1.	**Basics of Computer Organization** – Meaning of the terms: hardware and software – Block diagram of a simple computer – Processor – function and major components – Memory – function and types – I/O devices – functions and examples – Applications of computer technology	25
2.	**Problem Solving Through Logic Development** – Introduction to flowcharts – Introduction to algorithms – Examples of problem solving through flowcharts and algorithms	25
3.	**Number Systems** – Introduction to the number systems: binary, octal, decimal and hexadecimal – Representation of numbers in different number systems – Conversions: Binary, Decimal, Octal and Hexadecimal	25
4.	**Office Automation Tools- Word Processors** – Introduction to word processing – Uses of word processors – Creation, editing, and formatting of documents – Global search & replacement of text – Page layout and printing of a document – Spelling checker, Tables, Templates, Advanced features	25

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand computer organization and problem solving using algorithms and flowcharts.
2.	impart knowledge on fundamental concepts of number systems.
2.	provide knowledge on office automation tools.

Suggested References:	
Sr. No.	References
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
3.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt. Ltd, 5th edition, 2005.
4.	R.G.Dromey, "How to Solve it by Computer", Pearson Education India, 2008.
5.	R.K. Taxali, PC Software for Windows 98 Made Simple, Mc Graw Hill Pub. 2017.
6.	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, " Introduction to Algorithms" 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2009.
7.	Steven S. Skiena, "The Algorithm Design Module", 2nd Edition, Springer-Verlag London Limited, 2008.
8.	Donald E. Knuth, The Art of Computer Programming, Volume 1:Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1MACSC02**	Title of the Course	**Practical Based on US1MACSC01**
Total Credits of the Course	**4**	Hours per Week	**8**

Course Objectives:	1. To provide basic understanding of computer organization and problem solving using algorithms and flowcharts. 2. To impart knowledge on fundamental concepts of number systems. 3. To provide knowledge on office automation tools.

Course Content		
	Description	Weightage* (%)
	Part-1 : Practical based on US1MACSC01 (Unit-1 and Unit-2)	50%
	Part-2 : Practical based on US1MACSC01 (Unit-3 and Unit-4)	50%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	design algorithms and flowcharts.
2.	able to use number systems and office automation tools.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1MICSC01**	Title of the Course	**Computer Organization and Problem Solving**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To provide basic understanding of computer organization. 2. To understand the concepts of algorithms and flowcharts.

Course Content		
Unit	Description	Weightage* (%)
1.	**Basics of Computer Organization** – Meaning of the terms: hardware and software – Block diagram of a simple computer – Processor – function and major components – Memory – function and types – I/O devices – functions and examples – Applications of computer technology	50
2.	**Problem Solving Through Logic Development** – Introduction to flowcharts – Introduction to algorithms – Examples of problem solving through flowcharts and algorithms	50

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand basics of computer organization.
2.	understand the concepts of algorithms and flowcharts.

Suggested References:	
Sr. No.	References
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt. Ltd, 5th edition, 2005.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
4.	R.G.Dromey, "How to Solve it by Computer", Pearson Education India, 2008.
5.	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, " Introduction to Algorithms" 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2009.
6.	Steven S. Skiena, "The Algorithm Design Module", 2nd Edition, Springer-Verlag London Limited, 2008.
7.	Donald E. Knuth, The Art of Computer Programming, Volume 1:Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.

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B B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1MICSC02**	Title of the Course	**Practical Based on US1MICSC01**
Total Credits of the Course	**2**	Hours per Week	**4**

Course Objectives:	1. To impart knowledge on basic understanding of computer organization. 2. To impart fundamentals of using algorithms and flowcharts.

Course Content		
	Description	Weightage* (%)
	Practical based on US1MICSC03	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	design algorithms and flowcharts.
2.	impart knowledge on basic understanding of computer organization.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1IDCSC01**	Title of the Course	**Basics of Computers-I**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To provide basic understanding of computer organization. 2. To understand the concepts of algorithms and flowcharts.

Course Content		
Unit	Description	Weightage* (%)
1.	**Basics of Computer Organization** – Meaning of the terms: hardware and software – Block diagram of a simple computer – Processor – function and major components – Memory – function and types – I/O devices – functions and examples – Applications of computer technology	50
2.	**Problem Solving Through Logic Development** – Introduction to flowcharts – Introduction to algorithms – Examples of problem solving through flowcharts and algorithms	50

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand basics of computer organization.
2.	understand the concepts of algorithms and flowcharts.

Suggested References:	
Sr. No.	References
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt. Ltd, 5th edition, 2005.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
4.	R.G.Dromey, "How to Solve it by Computer", Pearson Education India, 2008.
5.	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, " Introduction to Algorithms" 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2009.
6.	Steven S. Skiena, "The Algorithm Design Module", 2nd Edition, Springer-Verlag London Limited, 2008.
7.	Donald E. Knuth, The Art of Computer Programming, Volume 1:Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US1IDCSC02**	Title of the Course	**Practical Based on US1IDCSC01**
Total Credits of the Course	**2**	Hours per Week	**4**

Course Objectives:	1. To impart knowledge on basic understanding of computer organization. 2. To impart fundamentals of using algorithms and flowcharts.

Course Content		
	Description	Weightage* (%)
	Practical based on US1IDCSC05	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	design algorithms and flowcharts.
2.	impart knowledge on basic understanding of computer organization.

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(B. Sc.) (Computer Science)
B. Sc. (CS) Semester-I

Course Code	US1SECSC01	**Title of the Course**	Information Technology Fundamentals-I (ITF-I)
Total Credits of the Course	2	**Hours per Week**	2

Course Objectives:	1. To understand the basic fundamentals of E-Commerce. 2. To study the social impacts of an Information Technology

Course Content		
Unit	Description	Weightage* (%)
1.	**E-Commerce** – Introduction to E-Commerce – Advantages and disadvantages of E-Commerce – Classification by nature of transaction: B2B, B2C, C2C etc. – Digital Signature, Payment Schemes – Electronics Data Exchange	50
2.	**Social Impacts of IT** – Introduction – Social uses of World Wide Web (WWW) – Privacy, security and Integrity of Information – Disaster Recovery – Intellectual Property Rights – Careers in IT	50

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Gain understanding of the basic fundamentals of E-Commerce.
2.	Understand the social impacts of an Information Technology.

Suggested References:	
Sr. No.	References
1.	Rajaraman V. : Introduction to Information Technology, Third Edition, Prentice-Hall Learning Private Limited, 2018.
2.	Elias. M. Awad, " Electronic Commerce", Prentice-Hall of India Pvt Ltd.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–II)

Course Code	**US2MACSC01**	Title of the Course	**Computer Fundamentals - II**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra. 3. To provide knowledge on spreadsheets and presentation tools.

Course Content		
Unit	Description	Weightage* (%)
1.	**Representation of Information and Parallel Instruction Execution** – Representation of integers – Character codes (ASCII, Unicode) – Error detection and correction codes, Hamming code – Array processors, Multiprocessors, Multifunctional units, Pipelining	25
2.	**Problem Solving Through Logic Development, Gates and Boolean Algebra** – Examples of advanced problem solving through logic development – Gates, Boolean Algebra – Truth Tables – Logic circuits for given Boolean expressions – De Morgan's Theorems	25
3.	**Office Automation Tools – Spreadsheets** – Introduction to spreadsheets with features and applications – Working with workbook, worksheets and cells - Creating, opening and sharing workbook - Adding, removing, copying and renaming worksheets - Modifying columns, rows and cells, formatting cells – Working with formulas and functions, sorting and filtering the data – Making charts (Bar chart, pie charts)	25

4.	**Presentation Tools** – Introduction to PowerPoint with features and applications – Creating a presentation: working with slides – Applying Themes and Slide Transitions – Inserting and formatting: picture, clip arts, shapes, lists, slides – Animating Text and Objects – Working with tables, charts and PowerPoint presentation view	25

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.
3.	provide knowledge on spreadsheets and presentation tools.

Suggested References:	
Sr. No.	References
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
3.	Malvino A. P.: Digital Computer Electronics, 2nd Edition, Tata McGraw, Hill Pub. Co. Ltd.,New Delhi, 1990.

4.	Gothmann, William H. : Digital Electronics - An Introduction to Theory and Practice, 2nd Edition,PHI,1982.
5.	Taxali R K : PC Software made simple for Windows, Tata McGraw-Hill Publishing Co. Ltd., 2000.
6.	Manuals of PC software.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US2MACSC02**	Title of the Course	**Practical Based on US2MACSC01**
Total Credits of the Course	**4**	Hours per Week	**8**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra. 3. To provide knowledge on spreadsheets and presentation tools.

Course Content		
	Description	Weightage* (%)
	Part-1 : Practical based on US2MACSC01 (Unit-1 and Unit-2)	50%
	Part-2 : Practical based on US2MACSC01 (Unit-3 and Unit-4)	50%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

3.	provide knowledge on spreadsheets and presentation tools.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US2MICSC03**	Title of the Course	**Computer Basics and Logic Gates**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Course Content		
Unit	Description	Weightage* (%)
1.	**Representation of Information and Parallel Instruction Execution** – Representation of integers – Character codes (ASCII, Unicode) – Error detection and correction codes, Hamming code – Array processors, Multiprocessors, Multifunctional units, Pipelining	50
2.	**Problem Solving Through Logic Development, Gates and Boolean Algebra** – Examples of advanced problem solving through logic development – Gates, Boolean Algebra – Truth Tables – Logic circuits for given Boolean expressions – De Morgan's Theorems	50

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%

2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Suggested References:	
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt. Ltd, 5th edition, 2005.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
4.	Malvino A. P.: Digital Computer Electronics, 2nd Edition, Tata McGraw, Hill Pub. Co. Ltd.,New Delhi, 1990.
5.	Gothmann, William H. : Digital Electronics - An Introduction to Theory and Practice, 2nd Edition,PHI,1982.
6.	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, " Introduction to Algorithms" 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2009.
7.	Steven S. Skiena, "The Algorithm Design Module", 2nd Edition, Springer-Verlag London Limited, 2008.
8.	Donald E. Knuth, The Art of Computer Programming, Volume 1:Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US2MICSC04**	Title of the Course	**Practical Based on US2MICSC03**
Total Credits of the Course	**2**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Course Content		
	Description	Weightage* (%)
	Practical based on US2MICSC03	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US2IDCSC05**	Title of the Course	**Basics of Computers - II**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Course Content		
Unit	Description	Weightage* (%)
1.	**Representation of Information and Parallel Instruction Execution** – Representation of integers – Character codes (ASCII, Unicode) – Error detection and correction codes, Hamming code – Array processors, Multiprocessors, Multifunctional units, Pipelining	50
2.	**Problem Solving Through Logic Development, Gates and Boolean Algebra** – Examples of advanced problem solving through logic development – Gates, Boolean Algebra – Truth Tables – Logic circuits for given Boolean expressions – De Morgan's Theorems	50

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	15%

2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Course Objectives:	1. To provide knowledge on spreadsheets. 2. To provide knowledge on presentation tools.

Suggested References:	
1.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.(4th Edition), 2003.
2.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt. Ltd, 5th edition, 2005.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.
4.	Malvino A. P.: Digital Computer Electronics, 2nd Edition, Tata McGraw, Hill Pub. Co. Ltd.,New Delhi, 1990.
5.	Gothmann, William H. : Digital Electronics - An Introduction to Theory and Practice, 2nd Edition,PHI,1982.
6.	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, " Introduction to Algorithms" 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2009.
7.	Steven S. Skiena, "The Algorithm Design Module", 2nd Edition, Springer-Verlag London Limited, 2008.
8.	Donald E. Knuth, The Art of Computer Programming, Volume 1:Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–I)

Course Code	**US2IDCSC06**	Title of the Course	**Practical Based on US2IDCSC05**
Total Credits of the Course	**2**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of information and parallel instruction execution. 2. To impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

Course Content		
	Description	Weightage* (%)
	Practical based on US2IDCSC05	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CCSC R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CCSC R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understanding the fundamentals of information and parallel instruction execution.
2.	impart knowledge on Problem Solving Through Logic Development, Gates and Boolean Algebra.

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B.Sc. (Computer Science)
B.Sc. (CS) (Semester–II)

Course Code	**US2AECSC07**	Title of the Course	**Communication Skills in English-II**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To understand and use notions and functions of language for communicative purpose. 2. To prepare reports of various events. 3. To draft e-mails efficiently. 4. To prepare effective job application and resume and face interviews confidently. 5. To make healthy discussion by actively participating in debates or group discussions. 6. To prepare and make power point presentation on various occasions.

Course Content		
Unit	Description	Weightage* (%)
1.	**Oral Communication Skills & Job Skills** – Effective presentation Skills; Putting the message across, Body Language, – Proxamics and Kinesics, dealing with Nearves, Using Visual Aids – Language of Meetings and participating in a seminar Telephone Techniques – Writing Job Application and CV – Interview Skills i.e., General Preparation for an Interview, Types of Questions generally asked in interviews, Types of interviews, Importance of non-verbal aspect. – Self-development Skills: i.e., Assertiveness, Stress Management, Time Management – Interpersonal Skills: Team Development Skills i.e., Team Talk Dynamics, Communication in Teams, Leadership Skills, Giving Feedback (Johari Window etc.)	50

2.	**Writing Skills and Individual Project** – Issues in Writing Business Letters i.e., Structure and Types of Business – Letters, Letters of Inquiry, Complaint, Adjustment and Regret – Report Writing Skills i.e., Types of Reports, Characteristics of a Good Report, Preparing and Organizing a Report and Individual reports (a report about the need to computerize the activities of your department) – Students can be made to work individually on detailed projects based on the following topics. However, the list given below is not exhaustive and thus any topic related to the areas of Communication and Personality Development can be worked upon in the interest of the students: – Process of Communication – Barriers of Communication – Types of Communication – Objectives of Communication – Stress Management – Time Management – Leadership Quality – Teamwork – Body Language – Presentation Skills – Group Discussion Skills – Personal Interview Skills – Feedback Skills	50

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Test Method:		
Division of Marks (External Exam)		
1	Individual Presentation and Project	10 Marks

2	Note Taking and Note Making	10 Marks
3	Job Application and CV	10 Marks
4	Business Letters	10 Marks
5	Report Writing	10 Marks
	Total:	**50 Marks**

Note:

- The students will have to bring certified copy of his / her project manuscript to the centre of external examination for the perusal of examiners and respond to the queries and questions of examiners related to same. The topic for the project should be selected from the ones enlisted in syllabi of the First and Second Semesters.
- Individual Presentations will have to be done by the students orally on the topic of their project. The presentation should not exceed five minutes.
- On We Go (6 above) is to be used for Note-taking and Note-making exercises.

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand and use notions and functions of language for communicative purpose.
2.	Prepare reports of various events.
3.	Draft e-mails efficiently.
4.	Prepare effective job application and resume and face interviews confidently.
5.	Make healthy discussion by actively participating in debates or group discussions.
6.	Prepare and make power point presentation on various occasions.

Suggested References:	
Sr. No.	References
1.	Rajendra Pal and J S Korlahalli, essentials of Business Communication, Sultan Chand and sons www.britishcouncil.com
2.	Chrissie Wright, Communication Skills, Jaico Publication.
3.	Sunita Mishra and C. Murali Krishna, Communication Skills for Engineers Pearson Education.
4.	Meenakshi Raman and Sangita Sharma, Technical Communication; Principles and Practice, Oxford University Press.
5.	On We Go, BBC's Audio-Visual Course.

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B.Sc. (Information Technology)
B.Sc. (IT) (Semester–II)

Course Code	**US2VACSC08**	Title of the Course	**Environmental Studies**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To make younger generation environment conscious. 2. To expose the students to the fundamental concepts of environment so that they can appreciate the importance of individual efforts to protect and preserve our environment. 3. To encourage them to make judicious use of our resources so that it will not only help present generation but also the future generations in meeting their needs.

Course Content		
Unit	Description	Weightage* (%)
1.	**Introduction to Environmental studies, Ecosystems and Natural Resources** – Definition, Scope and importance of Environmental Studies – Multidisciplinary nature of environmental studies – Component of Environment: Atmosphere, Hydrosphere, Lithosphere, Biosphere – Biogeochemical cycles: Carbon cycle and Nitrogen cycle – Concept of sustainability and sustainable development. – Definition and Structure of ecosystem – Abiotic and Biotic components – (Producers, Consumers and Decomposers) – Functions of Ecosystem: Energy flow in an ecosystem, Food chains, Food webs with examples – Classification -Renewable & Non-renewable Resources and types	50
2.	**Biotic Interactions** – Positive Interactions with suitable examples – A. Mutualism – B. Commensalism – C. Proto-cooperation – Negative Interactions with suitable examples – A. Exploitation – B. Competition – C. Antibiosis	50

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to

1.	understand the fundamental concepts of Environment so that they can appreciate the importance of individual efforts to protect and preserve our environment.
2.	make judicious use of our resources that will not only help present generation but also the future generations in meeting their needs.

Suggested References:

Sr. No.	References
1.	Ecology and Environment by P.D. Sharma.
2.	Fundamentals of Ecology by E.P.Odum.
3	Ecology by Mohan P. Arora.
4.	Fundamentals of Ecology by M.C. Dash.
5.	Environmental Science by S.C.Santra.
6.	An Introduction to Environmental Engineering & Science by Gilbert N Master.
7.	Encyclopaedia of Environmental Pollution and Control by R. K. Trivedi.
8.	Ecology and Sustainable development by P.S. Ramkrishana.
9.	Environmental Conservation; Fundamentals of Forestry Vol 5 by S.S. Negi, Bishen Singh, Mahendra Pal Singh.

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B.Sc. (Information Technology)
B.Sc. (IT) (Semester–II)

Course Code	**US2SECSC09**	Title of the Course	**Information Technology Fundamentals – II (ITF-II)**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To impart basic knowledge on Internet, web browsers, search engines and social networks 2. To learn different types of communication technologies

Course Content		
Unit	Description	Weightage* (%)
1.	**Internet Usage for E-learning** – Introduction to Internet and Web Browsers – Basics of search engines and their functionalities, Searching information, saving web pages, downloading files, etc. – Open learning sites- Wikipedia, Wikispaces, Wikieducator, etc. – Open Freewares – Introduction and examples – Advanced Social Networking	50
2.	**Communication Technologies** – Different communication mechanisms – E-mail: Writing e-mails to single and multiple users, attaching a file, Marking CC and BCC, Creating exclusive communication groups. – LCD Projectors: Using LCD projectors for making an audio-visual presentation – Tele/Video Conferencing – Blogging and chatting – Fax and Mobiles	50

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage

1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the basics of Information and communication technology
2.	Explore the applications of ICT in infrastructure

Suggested References:	
Sr. No.	References
1.	Online relevant references.
2.	Behrouz Forouzan, introduction to data communications and networking, Tata McGraw-Hill Publishing co. Ltd., New Delhi, 1998, 4th edition.
3.	Tanenbaum A. S., Computer Networks, 3rd Edition Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.

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